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Attorney Docket No.: 3436-009

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	WOBBEN, Aloys
Serial No.	:	09/581,887
Filing Date	:	July 19, 2000
Examiner	:	PONOMARENKO, Nicholas
Title	:	METHOD OF OPERATING A WIND POWER INSTALLATION AND A WIND POWER INSTALLATION
Group Art Unit	:	2834

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Alexandria, VA 22313-1450

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Gisele Richardson
Gisele Richardson

TRANSMITTAL OF APPEAL BRIEF

SIR:

Enclosed are three copies of the Appellant's Appeal brief together with a check for $320.00 in accordance with 37CFR 1.192. The Commissioner is authorized to use Deposit Account No. 07-1730 for any fees that may be required including fees for extensions. This is a continuing request.

Respectfully submitted,

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APPEAL BRIEF

I. REAL PARTY IN INTEREST.

The real party in interest in this case is Enercon, a German company having exclusive rights to the present invention.

II. RELATED APPEALS AND INTERFERENCES

None

III. STATUS OF CLAIMS

Claims 1-15 and 27 have been cancelled.

Claims 16-26, 28-38 have been rejected and are on appeal.

IV. STATUS OF AMENDMENTS

No amendment has been filed after the latest Office Action.

V. SUMMARY OF INVENTION

The present application pertains to a wind turbine used to convert wind power into electricity and feed this electricity into standard power grid. Generally speaking, wind turbine can be used independently as a source of electrical power that is separate and disconnected from a standard power distribution. In this arrangement, the power from the turbine is fed to the load either directly, or the power is saved in a power storage device. Alternatively, a wind turbine may be used to feed power into a standard power grid. Systems of this type are disclosed in many references, including U.S. Patents Nos. 4,695,736; 5,083, 039 and 6,137,187 of record. The

fact that the earliest of these patents was filed in 1985 illustrates that feeding power from a wind turbine into a power grid is a well established concept by now.

U.S. Patent No. 4,695,736 is particularly instructive because it illustrates a variable speed turbine feeding power to a power grid and including a plurality of blades 16 that are rotated by wind. The blades drive an AC generator 10 that generates power at a variable frequency. This power is fed a frequency converter 30 which then feeds power at a fixed frequency and voltage to a power grid 34. Importantly, as illustrated in Figs. 1 and 5 the generated power is sensed by a sensor 54 and used in a standard negative feedback circuit to control the speed of rotation of the blades, for example by changing the blades' pitch, as illustrated in Fig. 1. In addition, this patent also shows how the sensed power output of the AC generator 22 and the sensed speed of the turbine can be used to control the power output of the frequency converter 20. It is well known in the field of electrical engineering that the power generated by an AC generator is sensed by determining the output voltage of the AC generator, and the corresponding current flowing to the load, and then calculating the product of this voltage and current. In other words, sensing of generated power frequently includes a voltage sensing. A further point to note from this reference is that a schedule or look table 58 (Figs. 2 and 4) is used to relate the sensed power and the sensed speed to a corresponding output parameter. This output parameter is then used to control the output power of the frequency converter 30.

U.S. Patent No. 5,083,039 discloses another control circuit used to control the output power of a wind turbine by changing the pitch of its blades.

Of course, it is well known in the art that there are many other ways of controlling the output of a wind turbine, including changing the azimuth of the axis of rotation of the blades, as discussed in U.S. Patent No. 6,137,187.

The present invention pertains to a new wind turbine adapted to feed power to a standard power grid. More specifically, all known prior art wind turbines operate as self-contained entities or black boxes that, under the right meteorological conditions, generate an output at a nominal voltage. However, as explained in the specification, in some instances, the grid voltage may be higher than the nominal voltage at the output of a wind turbine. When such an event occurs, as well known from elementary principles of electrical engineering, the wind turbine cannot feed power to the grid, but in fact power is fed back from the grid into the wind turbine. Obviously, this is a highly undesirable condition since the purpose of the wind turbines is to produce, not consume electrical power. Moreover, if a wind turbine is forced to act as a power energy sink, it may be damaged. Hence whenever, the grid voltage rises to, or above, the nominal output voltage of the wind turbine, the wind turbine must be disconnected and/or powered down.

The present application provides a wind turbine with a control system that uses the voltage of the grid being fed by the turbine as a control parameter. Fig. 1 shows a wind turbine rotor 4 with a regulating device 10 connected to a standard network grid 6 at pont 21. The grid 6 feeds several electrical customers 8. A shown in Fig, 2, the regulating device consists of a PDI negative feedback control system. In this Figure, the generator G feeds power to the grid at a voltage U. This voltage is fed to a summer which also receives a reference parameter Uref.

Parameter Uref is calculated by the microprocessor 20 and is the target value for the control system, and determines the power generated by the turbine..

Referring now to Fig. 4, the microprocessor 20 receives three inputs from the lines L1, L2, L3 of the network grid 6, and, based on these values, generates the required reference parameter Uref.

Fig. 3 is particularly important because it explains how the reference voltage Vref is derived by the microprocessor 20. As discussed above, the microprocessor receive signals indicative of the network voltage. This voltage corresponds to the abscissa axis of the graph on Fig.3. The ordained axis represents the wind power generated by the turbine, as a function of the grid voltage G. As indicated in this graph, if the grid voltage is below U1, the generator output is constant at W0. If the voltage rises above, U1, the microprocessor 20 reduces Uref to thereby reduce the generated power as well.

When the grid voltage reaches a value Umax, the power output has been reduced to zero,

Fig. 3 shows a further aspect invention wherein when the grid voltage is between Umin and U3, the power generated and output by the turbine gradually increases from 0 to W0.

Claim 15 calls for:

> An electrical network having a network voltage and being connected to a customer [Fig. 1], comprising:
>
> sensing said network voltage [Figs. 3, 4];
>
> supplying electrical power to the electrical network at a supplied power level in accordance with said network voltage [Figs. 1, 3, 4]; and
>
> reducing said supplied power level to a lower level when said network voltage exceeds a threshold value U1 [Fig. 3].

Clearly, every step of this method is described the specification.

The remaining claims are similarly supported by the specification as filed.

VI. ISSUES

A. Do the claims and specification meet the requirements of 35 U.S.C. 112 ?

B. Are the claims unobvious?

VII. GROUPING OF CLAIMS

In order to simplify the issues, the applicant hereby states that the claims belong to a single grouping.

VIII. ARGUMENT

The Examiner has rejected the specification and the claims under 35 U.S.C. 112 (first and second paragraphs) and 35 U.S.C. 103.[1]

A. 35 USC 112-FIRST PARAGRAPH

This section of the U.S. Code sets forth two requirements. First, it requires that a specification contain a written description of the manner and process of making and using the invention in such full, clear and concise terms as to enable any person skilled in the art to which it pertains to make or practice the invention.

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[1]The Examiner has also objected to the drawings and the specification on the same grounds. It is respectfully requested that these objections be withdrawn.

The second requirement is that the specification must set forth the best mode contemplated by the inventor of carrying out his invention.

As explained by the courts, an Examiner may properly lodge a rejection of a claim as a based on a specification that is not in compliance with 35 U.S.C. 112, first paragraph, if it appears to be reasonable to conclude that one skilled in the art would have been unable to use the invention at the time the application was filed. When that conclusion is reasonable (*emphasis in the original)*, the burden is in the applicant to rebut it, if he can, such as by offering evidence. This evidence may include patents and publications to show the knowledge possessed by those skilled in the art and thereby establishing the specification is enabling. In re Ahlert 165 USPQ 418: 424 F.2d 1088 (CCPA 1970).

The Applicant hereby submits the above-mentioned patents as evidence to show that it wind turbines and regulating devices for the same were well known in the art several years before the subject application was filed. In addition, the Applicant further offers the Declaration of Mr. Stefan Hartge as further evidence of the state of the art prior to the present invention, and as evidence that a person skilled in the art could have easily practiced the invention from the information provided by the subject applicant at the time it was filed, and hence, contrary to the assertions of the Examiner, the application is enabled.

The Applicant will now address the specific rejections.

(1) Best Mode Rejection-paragraph 8 of the office action[2]

The Examiner has rejected the pending claims on the basis that, in his opinion, " the best mode contemplated by the inventor has not been disclosed.

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[2]All references to 'office action' pertain to the action of April 18, 2003.

Evidence of concealment of the best mode is based upon the contents of Amendment C, dated December 16, 2002." The Applicant further notes that the same rejection has been made in this case in the Office Action dated May 14, 2002. The Applicant in response indicated that no basis of fact has been established for this allegation, and has requested details so that a proper response can be made.

<u>The Examiner has failed to provide any indication of what is the basis of this rejection, and therefore it is respectfully requested that this rejection be stricken from the record</u>.

(2). Enablement-paragraph 9 of the Office Action

The Examiner has rejected the claims because the Applicants failed to disclose how the network voltage monitoring is done and used to control the generator. The Examiner further states that "the disclosure is of a general ('textbook') nature and has not required details to enable the claimed invention."

The Applicant would like to point out that the network monitoring is clearly shown in the Figures and described in the specification. Fig. 3 clearly shows that the three phases of the network grid 6 are connected to the microprocessor 20. The specification also states that (1) the network voltage is ascertained by a sensor (not shown)--page 5, line 17; the optimal generator voltage Uref in Fig. 2 is calculated in dependence of the ascertained network voltage – page 5, line 19, and that this calculation may be done with the microprocessor 20 of Fig. 3 – page 5, line 20. Thus, it is submitted that the specification and the drawings show how network voltage monitoring is done. In addition, as discussed above, Fig. 3 shows the interdependence between the power generated by the wind turbine under the control

of the regulating device 10 and the network grid voltage. Thus, it is respectfully submitted, that the specification and the drawings clearly show how the network grid voltage is used to control the generator.

Moreover, the Applicant has submitted a declaration from the person skilled in the art stating not only that he would practice the invention, but also describing how he would practice the invention by modifying a prior art system. The Examiner has not rebutted this evidence and hence his rejection lacks any basis.

(3) Incomplete claiming-Paragraph 10 of the Office Action

The Examiner in this paragraph states that " [t]he sensing of the network voltage and controlling the generator are critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure [sic]."

The Applicant fails to understand this rejection. The claims call for sensing of voltage, voltage sensors, and also describe what to do with this sensed voltage. For example, claim 16 recites "reducing said supplied power level to a lower level when said network voltage exceeds a threshold value U1."

If the Examiner believes that it is not known in the prior art how to measure the voltage of a network grid, the Applicant requests that judicial notice should be taken of the fact that Edison, Westinghouse and Tesla all knew how to sense or measure network grid voltages when they made the first such networks over 100 years ago.

In further support of its argument, the Applicant hereby further submits the declaration of Mr. Stefan Hartge. Mr. Hartge is a design engineer for Wobben Research and has a degree in electrical engineering and three years of experience

in the field of power equipment and wind turbines. As indicated by Mr. Hartge it is well known how to construct and connect a wind turbine to an electrical network, as shown for instance in U.S. Patent Nos. 4,695,736; 5,083,039 and 6,137,187.

Mr. Hartge further describes in his declaration how the teachings of the patent can be readily used to modify known wind turbines to practice the invention.

It is Hornbook law that a patentee does not have an obligation to describe every nut and bolt required to build the claimed device. In other words, an inventor does not have describe what is well known in the relevant art. All he has to do is to provide sufficient information for one skilled in the art to practice the invention. Mr. Hartge's declaration illustrates that this test has been met by the specification and accordingly, the requirements of 35 U.S.C. have been met. The Examiner should have, but has failed to take into consideration the declaration in which a person skilled in the art, Mr. Hartge, shows not only that he understands the invention, but also illustrates how he could implement it using the prior art as a starting point. The Applicant hereby submits that since the Examiner fails to rebut this evidence, the rejection under 35 USC 112, first paragraph should be dismissed.

In summary, the Applicant traverses the rejections under 35 U.S.C. 112, first paragraph on the grounds that these rejections are completely without any basis, and that the Applicant has rebutted the Examiner's position on every point, based on the disclosure, the drawings, the content of the prior art and the express statements by a person skilled in the art.

B. 35 U.S.C. 112 SECOND PARAGRAPH REJECTIONS– Paragraph 12 of the Office Action

This section of the code requires that the claims describe the invention distinctly. The Examiner takes the position that he cannot determine the scope of the invention sought by the Applicant with a reasonable degree of certainty from the language of the claims.

The Examiner cites three specific instances were in his opinion there is insufficient degree of certainty.

Prior to addressing these points, the Applicant hereby refers to Fig. 3 of the application in which, as discussed above, three phases for the generated wind power are shown. As the network voltage rises from a level below a threshold level Umin, to above another threshold level Umax, the wind power starts rising until it reaches a constant value W0. The wind power is maintained at this level until an intermediate network voltage U1 is reached. Thereafter, for the voltage interval $U1<G<Umax$, the power level is decreased so that when Umax is reached, the wind power level is back to its minimum value.

Getting back to the rejection, the first phrase that are not to the Examiner's liking is "reducing said supplied power level to a lower level when said network voltage exceeds a threshold value U1." Clearly this phrase refers to the third phase of Fig. 3 and is distinctly shown and described. Similarly the terms "reducing power level" refers to the third phase, "power level is maintained" pertains to the second phase, and "increasing power level" pertains to the first phase.

Thus the phrases are supported by the specification and therefore this rejection should be dismissed because the Examiner failed to make a prima facie case of inadequate disclosure.

C. REJECTIONS UNDER 35 U.S.C. 103 Paragraph 14 of the Office Action

The Examiner takes the position that the claims are obvious over U.S. Patent No. 4,695,736 in view of standard or classical feedback control loops. The Applicant respectfully traverses this rejection. U.S. Patent No. 4,695,736 does not teach a control circuit in which the network voltage is used as a control parameter. Again, it is Hornbook law, that in order to make out a case of prima facie obviousness, the Examiner has to show what in this reference teaches or suggests to one skilled in the art that the control scheme disclosed in the reference should be changed to the one disclosed and <u>claimed herein</u>.

All the Examiner has done regarding this issue is to state that "it would be obvious to one having ordinary skill in the art at the time the invention was made to develop a method of operating a windmill generator, as taught by the reference books, and to add specific elements, as taught by Dorman (U.S. Patent No. 4,695,736) in order to have an operational control system for a windmill."

The Applicant hereby points out that three part 'Graham test' requires the Examiner to compare the specific language of the claims to the prior art. Making general statements about some unspecified textbooks has no value. For example, claim 16 calls for the following two specific steps:

A-supplying electrical power to the electrical network at a supplied power level in accordance with said network voltage; and

B-reducing said supplied power level to a lower level when said network voltage exceeds a threshold value U1.

Claim 25 calls for :

a regulating device having a voltage sensor for sensing a network voltage associated with the electrical network, said regulating device being coupled to said electrical generator to control said power level in accordance with said network voltage, wherein said regulating device is adapted to reduce said supplied power level when said network voltage exceeds a level U1.

Claim 28 calls for:

regulating said supplied power level to protect said network from over-voltage by reducing said supplied power level when said network voltage exceeds a value U1.

It is the Examiner's duty to specifically point out where or what in the prior art suggests these specific features or limitations. Then, and only then can he show how the references could be combined by a person skilled in the art to read the claim, without, of course using hindsight as a predicate. The Examiner failed to do so. He has failed to provide any prior art in which the network grid voltage is sensed by the control system of the wind turbine and used as control parameter.

Since the Examiner failed to point to such teaching or suggestion, it is respectfully submitted that he has failed to make out a prima facie case of obviousness.

CONCLUSION

The Examiner has failed to provide any evidence that would support his rejections either under 35 U.S.C. 112 or 35 U.S.C. 103 and accordingly the

rejections should be reversed and the application should b allowed.

Dated: July 7, 2003
New York, New York

Respectfully submitted,

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CLAIMS ON APPEAL-APPENDIX A

16 . A method of operating a wind power installation including an electrical generator driven by a rotor for supplying electrical power to an electrical network having a network voltage and being connected to a customer, comprising:

sensing said network voltage;

supplying electrical power to the electrical network at a supplied power level in accordance with said network voltage; and

reducing said supplied power level to a lower level when said network voltage exceeds a threshold value U1.

17. The method of claim 16 wherein said generator is capable of generating said electrical power at a nominal power level dependant on current wind conditions, wherein said lower level is lower than said nominal power level.

18. The method of claim 16 wherein said step of reducing said supplied power level includes reducing said supplied power level gradually as said network voltage increases above said threshold U1.

19. The method of claim 18 wherein said step of reducing said supplied power level includes reducing said electrical power level to a zero level when said network voltage reaches a threshold value Umax.

20 . The method of claim 19 wherein said step of reducing further comprises maintaining said supplied power level at said zero level as said network voltage rises above said threshold level U_{max}.

21 . The method of claim 18 wherein said step of reducing said electrical power includes reducing said electrical power linearly as said network voltage increases between U1 and U_{max}.

22. The method of claim 16 wherein said sensing includes sensing said network voltage at the point at which said electrical power is fed to said electrical network.

23. The method of claim 16 further generating said electrical power at a predeterminable frequency.

24. The method of claim 23 wherein said electrical network is operating at a network frequency, wherein predeterminable frequency corresponds substantially to said network frequency.

25 . A wind power installation for delivering electrical power to an electrical network comprising:

a rotor rotated by wind;

an electrical generator coupled to said rotor and adapted to supply electrical power at a supplied power level to the electrical network; and

a regulating device having a voltage sensor for sensing a network voltage associated with the electrical network, said regulating device being coupled to said electrical generator to control said power level in accordance with said network voltage, wherein said regulating device is adapted to reduce said supplied power level when said network voltage exceeds a level U1 .

26 . The wind power installation as set forth in claim 25 wherein said regulating device has a microprocessor.

28 . The wind power installation as set forth in claim 25 wherein said regulating device is adapted to reduce said supplied power level from a first threshold to a second threshold level as said network voltage increases from level U1 to a level U_{max}.

29. The wind power installation as set forth in claim 28 wherein said regulating device is adapted to reduce said supplied power level from said first to said second threshold level linearly.

30. The wind power installation of as set forth in claim 29 wherein said second threshold level is zero.

31. A method of operating an energy-generating apparatus including an electric generator for supplying electrical power to an electrical network, the

electrical network being connected to at least one consumer and having a network voltage that fluctuates with demand, said method comprising:

supplying electrical power from said electrical generator to said electrical network at a supplied power level; and

regulating said supplied power level to protect said network from over-voltage by reducing said supplied power level when said network voltage exceeds a value U1.

32 . The method as set forth in claim 31 wherein said supplied power level is regulated by reducing said supplied power level to a zero level as said network voltage in creases from said value U1 to a value U_{max}.

33. The method as set forth in claim 32 wherein said supplied power level is reduced linearly.

34. The method as set forth in claim 32 wherein said supplied power level is maintained at a threshold level as set network voltage increases above said value Umax.

35. The method as set forth in claim 34 wherein said threshold level is zero.

36. The method of claim 31 further comprising increasing said supplied power level as said network voltage increases from a level U_{min} to a level U3, said levels U_{min} and U3 being smaller than said level U1.

37. The method of claim 31 wherein said supplied power level is maintained constant when said network voltage is below said level U1.

38. The method of claim 31 wherein said supplied power level is maintained constant when said network voltage is between a level U3 and U1, U3 being lower than U1.

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Parameter Uref is calculated by the microprocessor 20 and is the target value for the control system, and determines the power generated by the turbine..

Referring now to Fig. 4, the microprocessor 20 receives three inputs from the lines L1, L2, L3 of the network grid 6, and, based on these values, generates the required reference parameter Uref.

Fig. 3 is particularly important because it explains how the reference voltage Vref is derived by the microprocessor 20. As discussed above, the microprocessor receive signals indicative of the network voltage. This voltage corresponds to the abscissa axis of the graph on Fig.3. The ordained axis represents the wind power generated by the turbine, as a function of the grid voltage G. As indicated in this graph, if the grid voltage is below U1, the generator output is constant at W0. If the voltage rises above, U1, the microprocessor 20 reduces Uref to thereby reduce the generated power as well.

When the grid voltage reaches a value Umax, the power output has been reduced to zero,

Fig. 3 shows a further aspect invention wherein when the grid voltage is between Umin and U3, the power generated and output by the turbine gradually increases from 0 to W0.

Claim 15 calls for:

> An electrical network having a network voltage and being connected to a customer [Fig. 1], comprising:
>
> sensing said network voltage [Figs. 3, 4];
>
> supplying electrical power to the electrical network at a supplied power level in accordance with said network voltage [Figs. 1, 3, 4]; and
>
> reducing said supplied power level to a lower level when said network voltage exceeds a threshold value U1 [Fig. 3].

Clearly, every step of this method is described the specification.

The remaining claims are similarly supported by the specification as filed.

VI. ISSUES

A. Do the claims and specification meet the requirements of 35 U.S.C. 112 ?

B. Are the claims unobvious?

VII. GROUPING OF CLAIMS

In order to simplify the issues, the applicant hereby states that the claims belong to a single grouping.

VIII. ARGUMENT

The Examiner has rejected the specification and the claims under 35 U.S.C. 112 (first and second paragraphs) and 35 U.S.C. 103.[1]

A. 35 USC 112-FIRST PARAGRAPH

This section of the U.S. Code sets forth two requirements. First, it requires that a specification contain a written description of the manner and process of making and using the invention in such full, clear and concise terms as to enable any person skilled in the art to which it pertains to make or practice the invention.

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[1]The Examiner has also objected to the drawings and the specification on the same grounds. It is respectfully requested that these objections be withdrawn.

The second requirement is that the specification must set forth the best mode contemplated by the inventor of carrying out his invention.

As explained by the courts, an Examiner may properly lodge a rejection of a claim as a based on a specification that is not in compliance with 35 U.S.C. 112, first paragraph, if it appears to be reasonable to conclude that one skilled in the art would have been unable to use the invention at the time the application was filed. When that conclusion is reasonable (*emphasis in the original)*, the burden is in the applicant to rebut it, if he can, such as by offering evidence. This evidence may include patents and publications to show the knowledge possessed by those skilled in the art and thereby establishing the specification is enabling. In re Ahlert 165 USPQ 418: 424 F.2d 1088 (CCPA 1970).

The Applicant hereby submits the above-mentioned patents as evidence to show that it wind turbines and regulating devices for the same were well known in the art several years before the subject application was filed. In addition, the Applicant further offers the Declaration of Mr. Stefan Hartge as further evidence of the state of the art prior to the present invention, and as evidence that a person skilled in the art could have easily practiced the invention from the information provided by the subject applicant at the time it was filed, and hence, contrary to the assertions of the Examiner, the application is enabled.

The Applicant will now address the specific rejections.

(1) Best Mode Rejection-paragraph 8 of the office action[2]

The Examiner has rejected the pending claims on the basis that, in his opinion, " the best mode contemplated by the inventor has not been disclosed.

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[2]All references to 'office action' pertain to the action of April 18, 2003.

Evidence of concealment of the best mode is based upon the contents of Amendment C, dated December 16, 2002." The Applicant further notes that the same rejection has been made in this case in the Office Action dated May 14, 2002. The Applicant in response indicated that no basis of fact has been established for this allegation, and has requested details so that a proper response can be made.

The Examiner has failed to provide any indication of what is the basis of this rejection, and therefore it is respectfully requested that this rejection be stricken from the record.

(2). Enablement-paragraph 9 of the Office Action

The Examiner has rejected the claims because the Applicants failed to disclose how the network voltage monitoring is done and used to control the generator. The Examiner further states that "the disclosure is of a general ('textbook') nature and has not required details to enable the claimed invention."

The Applicant would like to point out that the network monitoring is clearly shown in the Figures and described in the specification. Fig. 3 clearly shows that the three phases of the network grid 6 are connected to the microprocessor 20. The specification also states that (1) the network voltage is ascertained by a sensor (not shown)--page 5, line 17; the optimal generator voltage Uref in Fig. 2 is calculated in dependence of the ascertained network voltage – page 5, line 19, and that this calculation may be done with the microprocessor 20 of Fig. 3 – page 5, line 20. Thus, it is submitted that the specification and the drawings show how network voltage monitoring is done. In addition, as discussed above, Fig. 3 shows the interdependence between the power generated by the wind turbine under the control

of the regulating device 10 and the network grid voltage. Thus, it is respectfully submitted, that the specification and the drawings clearly show how the network grid voltage is used to control the generator.

Moreover, the Applicant has submitted a declaration from the person skilled in the art stating not only that he would practice the invention, but also describing how he would practice the invention by modifying a prior art system. The Examiner has not rebutted this evidence and hence his rejection lacks any basis.

(3) Incomplete claiming-Paragraph 10 of the Office Action

The Examiner in this paragraph states that " [t]he sensing of the network voltage and controlling the generator are critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure [sic]."

The Applicant fails to understand this rejection. The claims call for sensing of voltage, voltage sensors, and also describe what to do with this sensed voltage. For example, claim 16 recites "reducing said supplied power level to a lower level when said network voltage exceeds a threshold value U1."

If the Examiner believes that it is not known in the prior art how to measure the voltage of a network grid, the Applicant requests that judicial notice should be taken of the fact that Edison, Westinghouse and Tesla all knew how to sense or measure network grid voltages when they made the first such networks over 100 years ago.

In further support of its argument, the Applicant hereby further submits the declaration of Mr. Stefan Hartge. Mr. Hartge is a design engineer for Wobben Research and has a degree in electrical engineering and three years of experience

in the field of power equipment and wind turbines. As indicated by Mr. Hartge it is well known how to construct and connect a wind turbine to an electrical network, as shown for instance in U.S. Patent Nos. 4,695,736; 5,083,039 and 6,137,187.

Mr. Hartge further describes in his declaration how the teachings of the patent can be readily used to modify known wind turbines to practice the invention.

It is Hornbook law that a patentee does not have an obligation to describe every nut and bolt required to build the claimed device. In other words, an inventor does not have describe what is well known in the relevant art. All he has to do is to provide sufficient information for one skilled in the art to practice the invention. Mr. Hartge's declaration illustrates that this test has been met by the specification and accordingly, the requirements of 35 U.S.C. have been met. The Examiner should have, but has failed to take into consideration the declaration in which a person skilled in the art, Mr. Hartge, shows not only that he understands the invention, but also illustrates how he could implement it using the prior art as a starting point. The Applicant hereby submits that since the Examiner fails to rebut this evidence, the rejection under 35 USC 112, first paragraph should be dismissed.

In summary, the Applicant traverses the rejections under 35 U.S.C. 112, first paragraph on the grounds that these rejections are completely without any basis, and that the Applicant has rebutted the Examiner's position on every point, based on the disclosure, the drawings, the content of the prior art and the express statements by a person skilled in the art.

B. 35 U.S.C. 112 SECOND PARAGRAPH REJECTIONS– Paragraph 12 of the Office Action

This section of the code requires that the claims describe the invention distinctly. The Examiner takes the position that he cannot determine the scope of the invention sought by the Applicant with a reasonable degree of certainty from the language of the claims.

The Examiner cites three specific instances were in his opinion there is insufficient degree of certainty.

Prior to addressing these points, the Applicant hereby refers to Fig. 3 of the application in which, as discussed above, three phases for the generated wind power are shown. As the network voltage rises from a level below a threshold level Umin, to above another threshold level Umax, the wind power starts rising until it reaches a constant value W0. The wind power is maintained at this level until an intermediate network voltage U1 is reached. Thereafter, for the voltage interval U1<G<Umax, the power level is decreased so that when Umax is reached, the wind power level is back to its minimum value.

Getting back to the rejection, the first phrase that are not to the Examiner's liking is "reducing said supplied power level to a lower level when said network voltage exceeds a threshold value U1." Clearly this phrase refers to the third phase of Fig. 3 and is distinctly shown and described. Similarly the terms "reducing power level" refers to the third phase, "power level is maintained" pertains to the second phase, and "increasing power level" pertains to the first phase.

Thus the phrases are supported by the specification and therefore this rejection should be dismissed because the Examiner failed to make a prima facie case of inadequate disclosure.

C. REJECTIONS UNDER 35 U.S.C. 103 Paragraph 14 of the Office Action

The Examiner takes the position that the claims are obvious over U.S. Patent No. 4,695,736 in view of standard or classical feedback control loops. The Applicant respectfully traverses this rejection. U.S. Patent No. 4,695,736 does not teach a control circuit in which the network voltage is used as a control parameter. Again, it is Hornbook law, that in order to make out a case of prima facie obviousness, the Examiner has to show what in this reference teaches or suggests to one skilled in the art that the control scheme disclosed in the reference should be changed to the one disclosed and claimed herein.

All the Examiner has done regarding this issue is to state that "it would be obvious to one having ordinary skill in the art at the time the invention was made to develop a method of operating a windmill generator, as taught by the reference books, and to add specific elements, as taught by Dorman (U.S. Patent No. 4,695,736) in order to have an operational control system for a windmill."

The Applicant hereby points out that three part 'Graham test' requires the Examiner to compare the specific language of the claims to the prior art. Making general statements about some unspecified textbooks has no value. For example, claim 16 calls for the following two specific steps:

A-supplying electrical power to the electrical network at a supplied power level in accordance with said network voltage; and

B-reducing said supplied power level to a lower level when said network voltage exceeds a threshold value U1.

Claim 25 calls for:

a regulating device having a voltage sensor for sensing a network voltage associated with the electrical network, said regulating device being coupled to said electrical generator to control said power level in accordance with said network voltage, wherein said regulating device is adapted to reduce said supplied power level when said network voltage exceeds a level U1.

Claim 28 calls for:

regulating said supplied power level to protect said network from over-voltage by reducing said supplied power level when said network voltage exceeds a value U1.

It is the Examiner's duty to specifically point out where or what in the prior art suggests these specific features or limitations. Then, and only then can he show how the references could be combined by a person skilled in the art to read the claim, without, of course using hindsight as a predicate. The Examiner failed to do so. He has failed to provide any prior art in which the network grid voltage is sensed by the control system of the wind turbine and used as control parameter.

Since the Examiner failed to point to such teaching or suggestion, it is respectfully submitted that he has failed to make out a prima facie case of obviousness.

CONCLUSION

The Examiner has failed to provide any evidence that would support his rejections either under 35 U.S.C. 112 or 35 U.S.C. 103 and accordingly the

rejections should be reversed and the application should b allowed.

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Respectfully submitted,

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CLAIMS ON APPEAL-APPENDIX A

16 . A method of operating a wind power installation including an electrical generator driven by a rotor for supplying electrical power to an electrical network having a network voltage and being connected to a customer, comprising:

sensing said network voltage;

supplying electrical power to the electrical network at a supplied power level in accordance with said network voltage; and

reducing said supplied power level to a lower level when said network voltage exceeds a threshold value U1.

17. The method of claim 16 wherein said generator is capable of generating said electrical power at a nominal power level dependant on current wind conditions, wherein said lower level is lower than said nominal power level.

18. The method of claim 16 wherein said step of reducing said supplied power level includes reducing said supplied power level gradually as said network voltage increases above said threshold U1.

19. The method of claim 18 wherein said step of reducing said supplied power level includes reducing said electrical power level to a zero level when said network voltage reaches a threshold value Umax.

20 . The method of claim 19 wherein said step of reducing further comprises maintaining said supplied power level at said zero level as said network voltage rises above said threshold level U_{max}.

21 . The method of claim 18 wherein said step of reducing said electrical power includes reducing said electrical power linearly as said network voltage increases between U1 and U_{max}.

22. The method of claim 16 wherein said sensing includes sensing said network voltage at the point at which said electrical power is fed to said electrical network.

23. The method of claim 16 further generating said electrical power at a predeterminable frequency.

24. The method of claim 23 wherein said electrical network is operating at a network frequency, wherein predeterminable frequency corresponds substantially to said network frequency.

25 . A wind power installation for delivering electrical power to an electrical network comprising:

a rotor rotated by wind;

an electrical generator coupled to said rotor and adapted to supply electrical power at a supplied power level to the electrical network; and

a regulating device having a voltage sensor for sensing a network voltage associated with the electrical network, said regulating device being coupled to said electrical generator to control said power level in accordance with said network voltage, wherein said regulating device is adapted to reduce said supplied power level when said network voltage exceeds a level U1 .

26 . The wind power installation as set forth in claim 25 wherein said regulating device has a microprocessor.

28 . The wind power installation as set forth in claim 25 wherein said regulating device is adapted to reduce said supplied power level from a first threshold to a second threshold level as said network voltage increases from level U1 to a level U_{max}.

29. The wind power installation as set forth in claim 28 wherein said regulating device is adapted to reduce said supplied power level from said first to said second threshold level linearly.

30. The wind power installation of as set forth in claim 29 wherein said second threshold level is zero.

31. A method of operating an energy-generating apparatus including an electric generator for supplying electrical power to an electrical network, the

electrical network being connected to at least one consumer and having a network voltage that fluctuates with demand, said method comprising:

supplying electrical power from said electrical generator to said electrical network at a supplied power level; and

regulating said supplied power level to protect said network from over-voltage by reducing said supplied power level when said network voltage exceeds a value U1.

32 . The method as set forth in claim 31 wherein said supplied power level is regulated by reducing said supplied power level to a zero level as said network voltage in creases from said value U1 to a value U_{max}.

33. The method as set forth in claim 32 wherein said supplied power level is reduced linearly.

34. The method as set forth in claim 32 wherein said supplied power level is maintained at a threshold level as set network voltage increases above said value Umax.

35. The method as set forth in claim 34 wherein said threshold level is zero.

36. The method of claim 31 further comprising increasing said supplied power level as said network voltage increases from a level U_{min} to a level U3, said levels U_{min} and U3 being smaller than said level U1.

37. The method of claim 31 wherein said supplied power level is maintained constant when said network voltage is below said level U1.

38. The method of claim 31 wherein said supplied power level is maintained constant when said network voltage is between a level U3 and U1, U3 being lower than U1.